## Advancing Well-Designed Water Trading Programs in California

Christina Babbitt, Environmental Defense Fund California Water Commission Meeting

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### **EDF's CALIFORNIA WATER PROGRAM APPROACH**

### Pilots



- Well Designed Water Trading Programs
- Multi-benefit Land Repurposing

### Data



- OpenET
- Water Accounting & Trading Platform

### Guidance



- White papers
- Reports
- Decision support tools

### Engagement



- Leadership Institute
- UC Merced partnership

### Why are well-designed groundwater trading programs important?













Surface Water Reduction Depletion

of Storage

Degraded Seawater Land

Quality Intrusion Subsidence GW Levels

Lowering









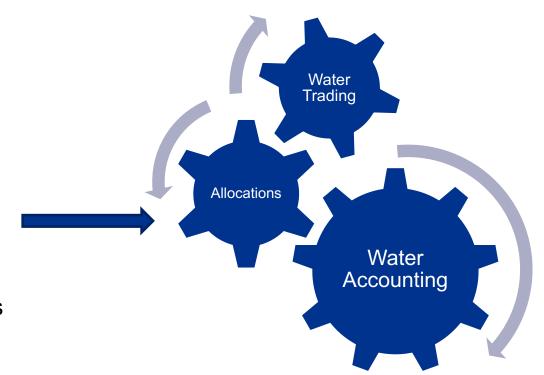
## Building the foundation to support well-designed water trading programs

Water **Trading Allocations** Water Accounting

Foundation of sustainable groundwater management

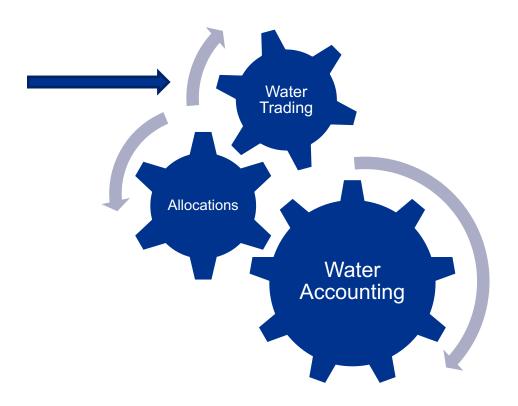
## Building the foundation to support well-designed water trading programs

In many subbasins, groundwater overdraft conditions will require GSAs to impose reductions in pumping and establish groundwater allocations



## Building the foundation to support well-designed water trading programs

Trading is one important strategy for more flexibly managing scarce water resources...but water trading is not a panacea



### Well-designed water trading programs include...



Community engagement



Allocations to meet diverse needs



Water budget & accounting



Well-designed trading rules

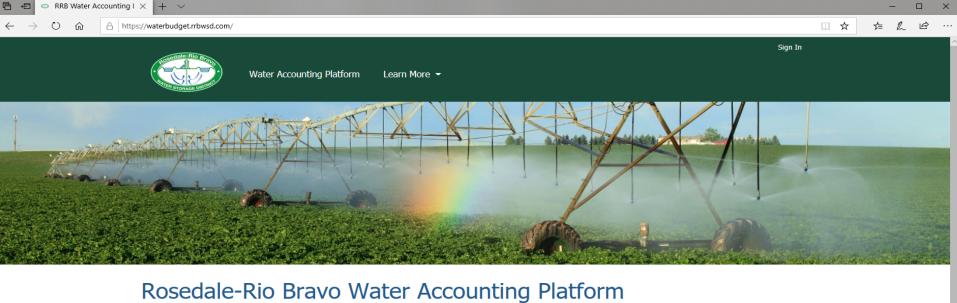


Monitoring & reporting



Flexibility & adjustment

# Advancing well-designed water trading programs in practice



- Create a better understanding of water demand and supplies, for Landowners to effectively and efficiently make informed decisions regarding water supply and land use.
- Utilize a satellite based evapotranspiration model, called OpenET, to give landowners a past and present understanding of water demands on their specific parcels.
- Over the long term, develop the accounting platform into a trading platform, encouraging indistrict water transfers.















### **Open-Source Water Accounting and Trading Platform**

Water trading is an optional add-on feature that can be built on top of the accounting platform to help landowners more flexibly manage their water resources.



Water trading

The platform uses the Groundwater Evaluation Tool (GET) to better understand the potential impacts and benefits of water management strategies, such as water trading or recharge activities, prior to taking action. GET is an optional add-on feature to the accounting and trading platform. GET users pay an annual subscription fee.





Modeling scenarios

Water managers can input water supply data into the platform to help create a detailed water budget for Water use (satellite-based data)



The water use data in the platform comes from OpenET, a web platform being developed by NASA, EDF and the Desert Research Institute. OpenET uses satellite-based data to calculate evapotranspiration — a key water metric that is particularly well-suited to tracking water use with Rosedale's geography. The platform can be tailored to incorporate additional water use data based on data availability and regional needs.







**Accounting** 

Water supply (district information)



Water budget



The platform combines water supply and use data to provide each landowner with a water budget for the year. The platform enables a landowner to check their water budget and outstanding balance online, similar to how they check their bank account online. The platform also features a water manager dashboard to track and account for water across a water district, which then informs billing.





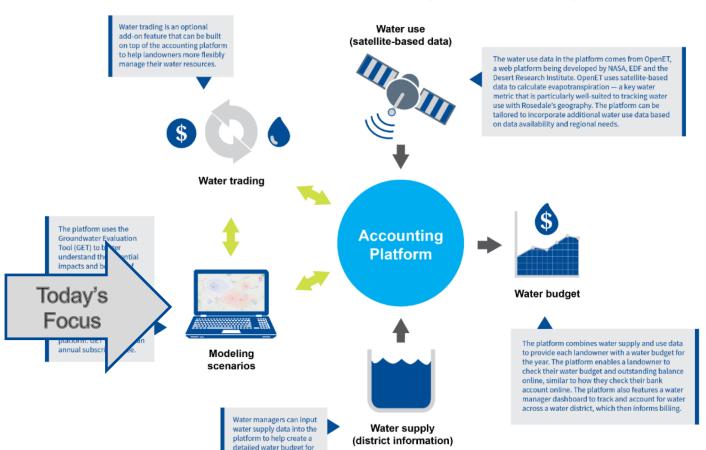




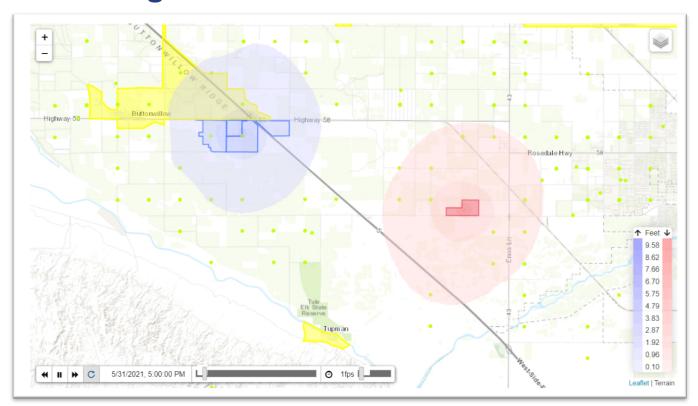




### **Open-Source Water Accounting and Trading Platform**



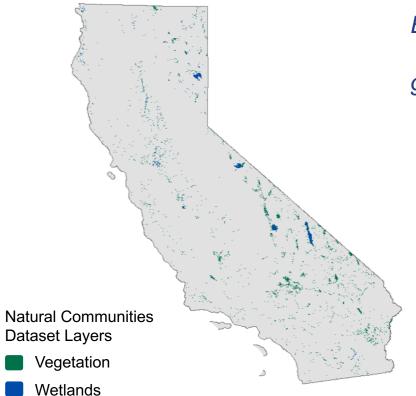
## Understanding how a water trading program can affect groundwater levels



- Seller parcel
- Buyer parcel
- Disadvantaged community
- Domestic well



### **Groundwater Dependent Ecosystems**



Ecological communities or species that depend on groundwater emerging from aquifers or on groundwater occurring near the ground surface



GDE Resources: https://groundwaterresourcehub.org/

## Partnering to Scale the Open-Source Water Accounting Platform

- Integration of additional data inputs
- Expansion of accounting functionality
- Co-development of common groundwater data standards
- Integration of open-source scenario planning and visualization features

















### **Considerations**

- How can robust water accounting systems be designed to best support water trading?
- What is the role of the state?
- How can stakeholders be more engaged and transparency be improved?
- How can protections for communities and wildlife be guaranteed?
- What should oversight look like?

### **Opportunities**

- Greater flexibility to manage scare water resources
- Access to new datasets, resources, and tools
- Opportunity to come together to learn and better understand how water trading programs can be developed to meet diverse needs

### Thank you!

